



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/459,574

12/13/1999

GEN SASAKI

6318-0022-2

1341

22850

7590

04/22/2004

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

TRAN, NHAN T

ART UNIT

PAPER NUMBER

2615

DATE MAILED: 04/22/2004

11

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/459,574

Applicant(s)

SASAKI, GEN

Examiner

Nhan T. Tran

Art Unit

2615

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 February 2004 and 13 December 1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 5-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 4 is/are rejected.
- 7) ☒ Claim(s) 2 and 3 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 December 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3.4.5.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Species I corresponding to Figure 4, claims 1-6, in Paper No. 10 is acknowledged. The traversal is on the ground that a search or examination of the entire application would not place a serious burden on the Examiner. This is not found persuasive because it is clear that the inventions I, II, III and IV are related as subcombinations disclosed as usable together in a single combination and each invention is classified in different subclasses that would place a serious burden on the Examiner:

- I. Claims 1 – 6, 12 – 14 & 18 - 27, drawn to combined signal generator and general image signal processing, classified in class 348, subclass 222.1.
- II. Claims 7 - 11, drawn to shading or black spot correction, classified in class 348, subclass 251.
- III. Claims 15 - 16, drawn to defective pixel (e.g., signal replacement), classified in class 348, subclass 246.
- IV. Claim 17, drawn to gray scale transformation (e.g., gamma correction), classified in class 348, subclass 254.

Inventions I, II, III and IV are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable:

Invention IV has separate utility such as “gamma compensation table of performing, when given a N-bit length pixel data, gamma compensation processing about said pixel data; and

Art Unit: 2615

a selector in which, when given a N-bit length pixel data, said pixel data is inputted to said gamma compensation table; and when given a (N-2)-bit length pixel data, switching is made so that four data rows sequentially provided as a (N-2)-bit length pixel data, are respectively inputted to four look-up tables obtained by dividing said gamma compensation table into four” which is not required by the inventions I, II and III.

Invention III has separate utility such as “a defective pixel compensation block that reads defective pixel addresses stored in said main memory disposed outside of said real time processing unit, and performs defective pixel compensation when a pixel address of a pixel data residing in image matches said defective pixel address” which is not required by the inventions I, II and IV.

Invention II has separate utility such as cumulative addition processing function, circulation addition processing function and shading compensation which are not required by the inventions I, III and IV.

Invention I has separate utility such as pixel data of image temporarily stored in a main memory, which is not required by the inventions II, III and IV.

See MPEP § 806.05(d).

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper. The requirement is still deemed proper and is therefore made FINAL.

In addition, the previously elected Group I corresponding to claims 1-6, 12-14 and 18-27 in paper No. 8, clearly contains claims directed to the following patentably distinct species:

Art Unit: 2615

1. Species I corresponds to Fig. 4.
2. Species II corresponds to Figs. 11-14.
3. Species III correspond to Fig. 15.
4. Species IV corresponds to Fig. 19.
5. Species V corresponds to Fig. 25.

2. Furthermore, the elected Species I contains claims **5 and 6** drawn to other Species nonelected with traverse in Paper No. 10. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

On 4/13/2004, the Examiner called the Applicant's attorney, Raymond F. Cardillo, Jr. and discussed about the claimed feature recited in claims 5 and 6 that do not read on the elected Species I. Instead, claims 5 and 6 appear to read on non-elected species II corresponding to Figs. 11 – 14 for color interpolation. During the conversation, the Examiner requested the Applicant's attorney to specifically point out how and where the claimed features of claims 5 and 6 being readable on Species I if they read on. However, the Applicant's attorney has not responded to the Examiner regarding the claimed feature of claims 5 and 6. Therefore, claims 5 and 6 are withdrawn from consideration on merits.

The requirement is still deemed proper and is therefore made FINAL.

Claim Objections

3. Claim 2 is objected to because of the following reason set forth below:

Claim 2 recites the limitations "the foremost stage image processing block" in line 22 of page 74, "the second" in line 25 of page 74, "the rearmost stage image processing block" in line 4 of page 75, "the preceding image processing blocks" in line 6 of page 75, and "the succeeding image processing block" in line 8 of page 75. There are insufficient antecedent basis for these limitations in the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Honma Yoshihiro (JP 10-042181).

Regarding claim 1, Honma discloses an image processing circuit of an image input device (2) which performs a predetermined image processing of image photographed by an image pickup device (CCD) in the image input device (Fig. 1 and Abstract), the circuit comprising:

a real time processing unit (processing circuit 5 including detailed processing section 21, Figs. 1 & 2) in which a predetermined general image processing (e.g., AE, AWB, etc.) of a pixel data being photographed by the image pickup device and inputted sequentially is performed by real time processing (paragraphs [0024] & [0030]-[0032] and [0066]);

a main memory (either DRAM 6, Flash memory 7, or PC card 8) that stores a pixel data outputted from at least the real time processing unit, in image frame units (paragraphs [0024] - [0025]);

a central control unit (MPU 3) in which respect to image temporarily stored in the main memory, exceptional image processing (i.e., JPEG compression) except for the general image processing is executed, and then stored in the main memory (paragraphs [0033] and [0054]).

Although Honma does not explicitly show “a selector” for selecting the pixel data being photographed by the image pickup device and inputted subsequently, such “a selector” is inherent in Honma in order for the signal processing (5) to write or read data to or from the main memory through buses (11, 12) under control of the MPU 3 as described in Figs. 1 & 2 and paragraphs [0024] & [0030]-[0032].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Honma Yoshihiro (JP 10-042181) in view of Hidari (US 5,905,533).

Regarding claim 4, Honma fails to disclose repetitive inputs from main memory to the real time processing unit. Hidari teaches an image processing unit that is implemented with a circulative addition circuitry to perform addition by circulating pixel data output from a memory over and over again to reduce noise contained in pixel data (col. 8, line 44 – col. 9, line 15). As the number of times of circulative addition increases, the degree of noise is decreased (Figs. 6-9).

Therefore, it would have been obvious to one of ordinary skill in the art to enhance the real time processing unit in Honma by including a circulative addition circuitry such that the pixel data inputted repetitively from the main memory to the real processing unit would be circulated by a number of times to reduce noise contained in the pixel data.

Allowable Subject Matter

6. Claims 2 & 3 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fails to teach or suggest the combination of limitations as required in claims 2 and 3.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nhan T. Tran whose telephone number is (703) 605-4246. The examiner can normally be reached on Monday - Thursday, 8:00am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew B Christensen can be reached on (703) 308-9644. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2615

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NT.



ANDREW CHRISTENSEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600